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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/025,784	12/26/2001	Kiwamu Tanahashi	HIRA.0020	5890

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EXAMINER	
RICKMAN, HOLLY C	

ART UNIT	PAPER NUMBER
1773	

DATE MAILED: 06/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/025,784	TANAHASHI ET AL.	
	Examiner	Art Unit	
	Holly Rickman	1773	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 March 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2 and 4-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-2,4-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-2, 4-6, and 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Honda et al. (IEEE Trans. Magn., Vol. 36, No. 5, September 2000, pp. 2399-2401) in view of Chen et al. (US 6120890).

Honda et al. disclose a magnetic recording medium having a $FeTa_8C_{12}$ soft magnetic layer disposed on a substrate. The ratio of Ta concentration to C concentration in this alloy is about 0.67. The reference teaches that a nonmagnetic CoCr intermediate layer is deposited on the soft magnetic layer followed by a perpendicular magnetic recording layer (see Section II. EXPERIMENTAL PROCEDURE and Table 1).

Honda et al. disclose all of the limitations of the claims except for the presence of an amorphous or nanocrystalline layer between the substrate and the soft magnetic layer and the presence of α-Fe nanocrystals in the FeTaC soft magnetic layer.

It is the Examiner's contention that α-Fe nanocrystals are inherently present in the FeTaC soft magnetic layer taught by Honda et al. because the reference teaches annealing FeTaC film having the same composition as disclosed in the present specification at the

same temperature as disclosed in the specification. Thus, one of ordinary skill in the art would expect the same microcrystalline state to result.

Chen et al. teach the equivalence of an amorphous NiP plated Al substrate and a glass substrate in a conventional magnetic recording medium (col. 1, lines 43-51). It would have been obvious to one of ordinary skill in the art at the time of invention to substitute a NiP-plated Al substrate for the glass substrate disclosed by Honda et al. in view of Chen's teaching of the art recognized equivalence of the materials.

Chen et al. also teach that amorphous NiP may be plated on glass to prevent leaching of any Li that may be present in the glass (see col. 1, lines 15-21; col. 4, lines 42-47). As such, it would have been obvious to plate an amorphous NiP layer on the glass layer taught by Honda et al. in order achieve this benefit.

With respect to claims 4-6, Honda et al. disclose all of the limitations of the claims except for the value of $Hc_{\perp}$. However, the reference does disclose using a $FeTa_8C_{12}$ soft magnetic layer and the present specification teaches that this particular alloy produces the claimed $Hc_{\perp}$ values (see p. 9, Table 3).

Thus, it is the Examiner's contention that the structure taught by Honda et al. inherently satisfies the limitations of the claims directed to $Hc_{\perp}$ by virtue of the fact that $FeTa_8C_{12}$ is used for the soft magnetic layer.

It has been held that where claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes, the burden of proof is shifted to applicant to show that prior art products do not necessarily or inherently possess characteristics of claimed products where the rejection is based on inherency under 35 USC §102 or on prima facie obviousness under 35 USC

§103, jointly or alternatively. *In re Best, Bolton, and Shaw*, 195 USPQ 430. (CCPA 1977).

3. Claims 7-8 and 13-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Honda et al. (IEEE Trans. Magn., Vol. 36, No. 5, September 2000, pp. 2399-2401) in view of Chen et al. (US 6120890) as applied to claims 1-2, 4-6, and 9-12, above, and further in view of Tanahashi et al. (US 6001447).

Honda et al. in view of Chen et al. teach all of the limitations of the claims except for the exact details of the recording apparatus for use therewith.

Tanahashi et al. teach that it is known in the art to use a magnetic recording medium in conjunction with a driving means for moving the recording medium, a magnetoresistive magnetic head, driving means for moving the magnetic head, and a signal processing unit (see abstract).

It would have been obvious to one of ordinary skill in the art at the time of invention to combine the magnetic recording medium taught by Honda et al. with the conventional magnetic recording apparatus components taught by Tanahashi et al. in order to form a functional disk drive.

Response to Arguments

4. Applicant's arguments filed 3/18/04 have been considered but are not persuasive.

Applicant argues that (1) the combination of Honda et al. in view of Chen et al. fails to teach the newly added claim limitation directed to the presence of α-Fe nanocrystals in the FeTaC soft magnetic layer and (2) the claimed combination would

result in the heat treatment of an amorphous NiP layer at a high temperature resulting in the transformation of the NiP layer to a crystalline structure. With respect to the first point, it is the Examiner's contention that the annealed FeTaC layer taught by Chen et al. inherently satisfies the claim limitation directed to the presence of α-Fe nanocrystals for the resason set forth above. With respect to the second argument, the Examiner respectfully disagrees with Applicant's assertion that annealing of the FeTaC layer at a given temperature will necessarily heat treat the NiP layer at the same temperature. There is no evidence of record to support this conclusion. Therefore, the rejections of record have been maintained.

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Holly Rickman whose telephone number is (703) 305-2642. The examiner can normally be reached on Monday-Friday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul J. Thibodeau can be reached on (703) 308-2367. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Holly Rickman
Primary Examiner
Art Unit 1773

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June 11, 2004